



Delayed Interval Hysterectomy After Cesarean Delivery for Placenta Accreta Spectrum



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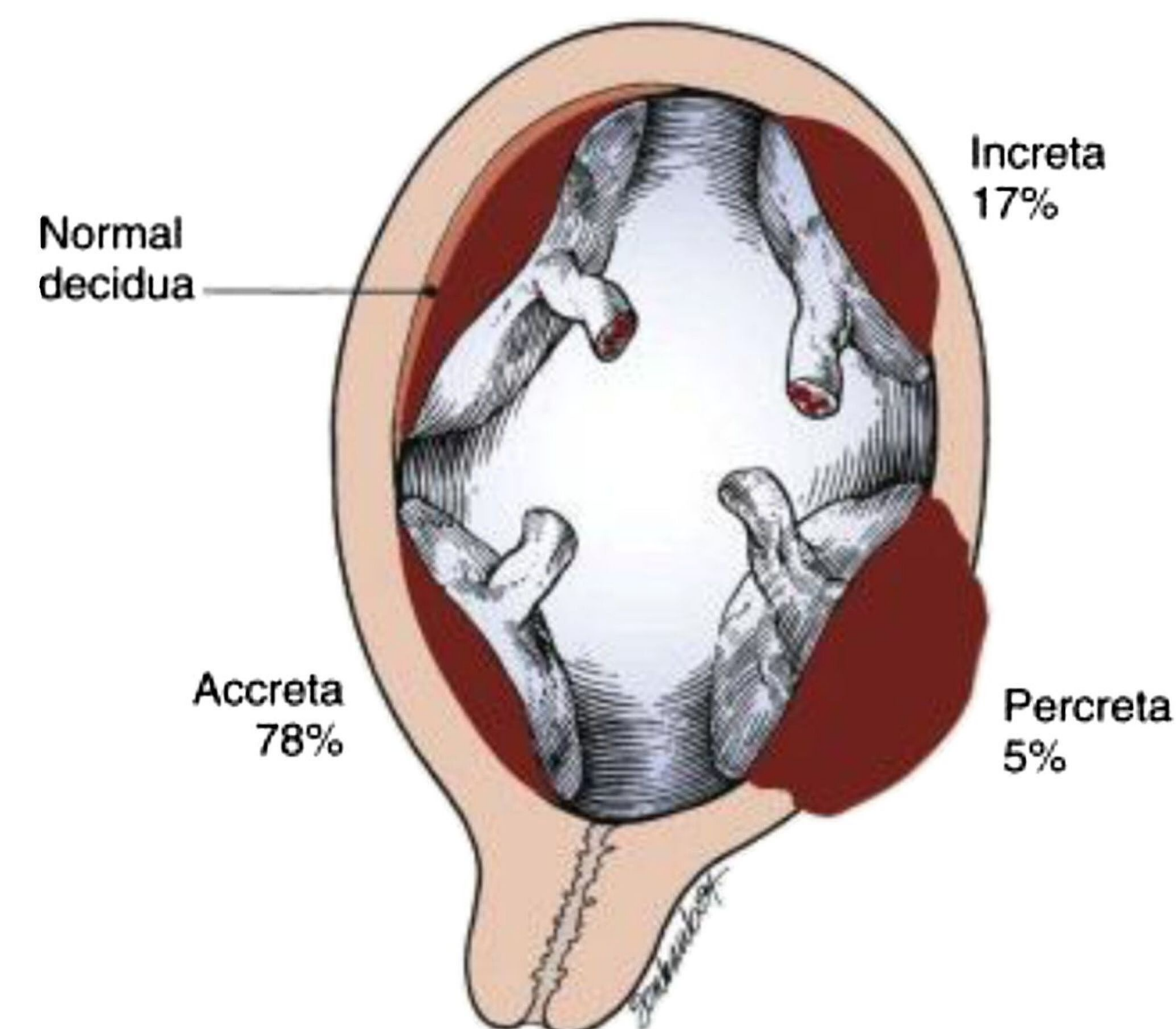
Introduction

Placenta accreta spectrum (PAS) patients carry a risk of death up to 7%, and up to 60% of patients will require transfusion of four units of packed red blood cells are more.¹

Optimal management to reduce morbidity and mortality involves case-by-case considerations by a skilled multidisciplinary team, but optimal timing of placental removal remains unclear. The Obstetric Case Consensus on PAS, endorsed by The American College of Obstetricians and Gynecologists (ACOG) and Society for Maternal Fetal Medicine, outlines three possible courses of management:¹

- **Cesarean hysterectomy:** with the placenta left in situ, performed immediately after delivery of the fetus
- **Uterine preservation/conservative management:** removal of placenta or uteroplacental tissue without removal of the uterus
- **Expectant management:** leaving the placenta either partially or totally in situ, or only the placenta that spontaneously separates is removed before uterine closure

Delayed Interval Hysterectomy (DIH) is a newer hybrid technique of expectant management followed by a planned hysterectomy up to six weeks later, typically preserved for percreta patients, which compromise 5-7% of all PAS cases.²



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Case Presentation

We present a 37 year old. G3P2 at 33w5d with a history of SLE and Factor V Leiden syndrome presenting with suspected severe placenta percreta with possible bladder and anterior abdominal wall invasion. She underwent a planned cesarean delivery (CD) under GETA, followed by a successful delayed interval hysterectomy 28 days later. Her initial CD included a multidisciplinary approach with Maternal Fetal Medicine, bilateral ureteral stent placement and cystoscopy by Urology, REBOA sheath placement (not utilized) by Trauma Surgery, Interventional Radiology on standby, and a pediatric intensivist present for immediate neonate intubation and care. The estimated blood loss (EBL) for the initial CD was 100 mL and the patient and neonate experienced no sequelae. Following the delayed TAH/BLS 28 days later, the patient required one unit of packed red blood cells for EBL of 1000 mL, and developed a CAUTI from the indwelling foley; she otherwise recovered well and was discharged on POD5.

DIH, Special Considerations

- Uterotonics are avoided, as the goal to keep the placenta adherent to the myometrium
- A planned DIH can convert to a CH anytime due to partial placental separation
- Patients must be extremely reliable for close, weekly follow up
- Prophylactic antibiotic use has not shown benefit²
- Methotrexate use to encourage placental resorption has no clear benefit⁵ and has caused at least one maternal death³



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Literature Review

	Cesarean Hysterectomy	Conservative Management	Expectant Management	Delayed Interval Hysterectomy (DIH)
Indications	Accreta, increta, percreta	Accreta or increta with a clearly delineated, focal area of involvement and an accessible border of healthy myometrium. ⁴ Future fertility desired	Accreta, increta Future fertility desired	Only morbidly adherent percreta cases with potential extrauterine organ involvement should be considered. Optimal timing between initial cesarean and DIH is unclear; most sources say an average of 6 weeks between surgeries. ² Emergent procedure as a consequence of delayed complications after attempted conservative management.
Complications	Shellhaas et. al. (2009): transfusion of red blood cells (84%) and other blood products (34%), fever (11%), subsequent laparotomy (4%), ureteral injury (3%), and death (1.6%). ⁵	Palacios Jaraquemada et al. (2004): 68-patient case series, complications included lower ureteral injuries (n=2), vesical fistula (n=1), hematoma in the vaginal cuff (n=1) and uterine infection (n=1). ⁶ Legendre et. al. (2014): 11/12 patients had complete removal of retained placenta after conservative management followed by one (5/12), two (2/12), or three (4/12) hysteroscopy procedures; One patient required a secondary hysterectomy. ⁷	Clausen (2013): 58% risk of hysterectomy up until nine months after delivery ⁸ Sentilhes et. al. (2010): - 28% (47/167) Infection or febrile morbidity - 6% (10/167) Severe morbidity: sepsis, septic shock, peritonitis, uterine necrosis, fistula, injury to adjacent organs, acute pulmonary edema, acute renal failure, deep vein thrombophlebitis or pulmonary embolism, or death. ³	Lee et. al. (2017): no cases of emergent hysterectomy, delayed hemorrhage, or sepsis. No cases of massive transfusion. Four IR-related complications. ² Sentilhes et. al. (2010): 70% (7/10) of severe outcomes occurred in the delayed hysterectomy group. ³
Blood Loss	Lee et. al. (2017): - EBL median mL [range], 2800[400–4500] - # PRBCs, 2[0-10] ²			Lee et. al. (2017): - EBL median mL [range]. 750[50-2000] - # PRBCs, 0[0-4] - prophylactic UAE was performed in 12/13 DH ²

Conclusion

No randomized prospective study exists comparing the maternal outcomes of traditional cesarean hysterectomy to alternative techniques. Our best evidence at this time suggests DIH should be offered selectively to the highest risk percreta cases. While this method has been shown to decrease blood loss, it still comes with a high risk of severe maternal morbidity and mortality, and should only be performed in a multi-disciplinary manner at fully equipped hospitals.

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